IN THE SPECIFICATION:

Please replace paragraph number **[0004]** with the following rewritten paragraph:

[0004] U.S. ~~Pat.~~ Patent No. 4,492,759 to Gorman et al. discloses a qualitative test for detecting asbestos. The qualitative test is performed with a field test kit that includes the reagents and tubes required to perform the test. A sample is placed in a column of the test kit and various reagents are added ~~to~~ to, and removed ~~from~~ from, the sample in the column. If the tested sample contains asbestos, a color develops and indicates the presence of the asbestos. Another field test kit is disclosed in U.S. ~~Pat.~~ Patent No. 4,992,379 to Hanby. The field test kit in Hanby is used to qualitatively and quantitatively test for aromatics in soil and groundwater. The field test kit includes items for performing the test, wherein a characteristic color is developed if the contaminating aromatics are present in a sample.

Please replace paragraph number **[0006]** with the following rewritten paragraph:

[0006] Although some field test kits include components that allow testing to be performed on site in the field, other tests require conditions or equipment that are not practical or economical for performance in the field. For example, the testing may require the use of a detection apparatus that is too expensive or too large to be efficiently transported ~~to~~ to, and used ~~in~~ in, the field. In such cases, the tests are performed in a laboratory.

Please replace paragraph number **[0008]** with the following rewritten paragraph:

[0008] In one exemplary embodiment, a method for assaying a chemical is disclosed. The method includes depositing an extraction solution and a predetermined amount of an internal standard in a container. A sample is collected from a first location and placed in the container such that the sample contacts the extraction solution. The container including the sample is transported from the first location to a second location where the chemical in the extraction solution is quantitatively measured. The method may be used to assay any chemical, ~~including~~ including, for example, a pesticide, a sprout inhibitor, a disinfectant, or a sprout suppressant.

Please replace paragraph number **[0015]** with the following rewritten paragraph:

[0015] In one exemplary embodiment, a method for analyzing an amount of chemical on a crop is disclosed. In the exemplary embodiment, the crop is a tuber, such as a potato, and the chemical is a sprout inhibitor, such as 1,4-dimethylnapthalene (1,4 DMN). It will be apparent to those of ordinary skill in the art that the methods, kits and system described herein may be used to analyze any type of chemical on any type of crop, including other vegetables, fruits, grains, tubers or other types of samples (*e.g.*, soil, water, food). Other chemicals that may be analyzed include, without limitation, herbicides, pesticides, fertilizers, hydrocarbons, aromatics, growth hormones (*e.g.*, gibrellic acid, naphthyl acetic acid, etc.) and other known chemicals. In addition to DMN, other sprout inhibitors (sprout suppressants) that may be analyzed include, but are not limited ~~to~~ to, chlorpropham (CIPC), diisopropylnaphthalene, aromatic acids, maleic hydrazide, hydrogen peroxide plus (HPP), jasmonates, acetohydroxyacid synthase (AHAs), carvone, any combination of these chemicals, and any other type of sprout inhibitor known by those of ordinary skill in the ~~art~~ art.

Please replace paragraph number **[0017]** with the following rewritten paragraph:

[0017] Referring now to FIG. 1, there is shown an exemplary embodiment of a kit used to collect a sample from the potato at a first location, such as a storage facility, generally at 10. The kit 10 may include gloves 12, such as disposable, latex gloves which are to be worn by a person handling and sampling the potatoes in order to prevent contamination of the sample and protect the person from exposure to any chemicals. The kit 10 may also include written instructions to instruct the person sampling the potatoes how to properly take the tissue samples from the potatoes and/or a sample logbook 14 for recording data pertaining to the sampled potatoes. A sampling means or metal pipe 16 is also present in the kit 10 for removing a tissue sample from the potato. In one particular embodiment, the sampling means 16 is a beveled, cylindrical pipe for collecting a tissue sample core from the potato. In other exemplary

embodiments, the sampling means 16 may comprise a cork borer, a melon baller, a knife, or any other device which is able to remove the sample from the potato.

Please replace paragraph number **[0018]** with the following rewritten paragraph:

[0018] The kit 10 may further include a knife 18 for removing the circular, tissue sample core from the potato. In the exemplary embodiment, the knife 18 is a three-inch paring knife, but it will be apparent by those of ordinary skill in the art that any other device which performs functions the same as, or equivalent to, the knife 18 described herein may also be used. Sealable containers 20 are also included in the kit 10. The containers 20 include a cap 22 for sealing the containers 20. In one exemplary embodiment, the containers 20 are 30 ml amber, glass jars, but it will apparent by those of ordinary skill in the art that the containers 20 may be any other type of vial, jar or tube capable of being sealed as is known in the art. The kit 10 may also include tape to more efficiently seal the containers 20. In other exemplary embodiments, the containers 20 may comprise any type of inert material that does not react with the constituents placed in the container 20 or the chemical to be assayed, including, without limitation, polyethylene, polypropylene, polyethylene terephthalate copolymer, ~~Teflon®~~ Teflon® brand polymer containing materials, fluorinated high-density polyethylene, polymethyl pentene, polyvinyl chloride, polysulfone, other known materials, or combinations thereof.

Please replace paragraph number **[0020]** with the following rewritten paragraph:

[0020] The extraction solution 24 is ~~aliquotted to~~ divided evenly within the containers 20 as is known in the art. The extraction solution 24 further comprises 50 µl of an internal standard which may be added to the solvent using a 100 µl ~~pipetteman~~ pipette, as is known in the art. The internal standard can be any chemical known in the art that has a substantially similar molecular weight, volatility and polarity as the chemical being tested (*e.g.*, sprout inhibitor or pesticide), as well as ~~teh~~ the corresponding extracts of the tested chemical. For example, where 1,4 DMN is being tested, a different dimethylnaphthalene can be used as the internal standard. In a particular embodiment of the invention, the internal standard will have a retention time similar (but not identical) to 1,4 DMN. In other words, a retention

time in a Gas Chromatograph analysis should be 0.5-4 minutes earlier or later than the retention time for 1,4 DMN. In one exemplary embodiment, where 1,4 DMN is being tested, 1,6 DMN could function as an internal standard since it has a retention time that is ~~approximate~~ approximately 1 minute earlier than 1,4 DMN. In contrast, 2,3 DMN is not desirable for use as an internal standard for testing 1,4 DMN because it has a retention time that is only seconds earlier than ~~1,4DMN~~ 1,4 DMN. In another particular embodiment, ~~2~~ 2-ethylnaphthalene can be used as the internal standard for 1,4 DMN.

Please replace paragraph number **[0022]** with the following rewritten paragraph:

[0022] In one aspect of the method of the present invention, one or more containers 20 are transported to a second location, such as a potato storage facility. As previously described herein, the kit 10 includes written instructions and/or a sample logbook 14 to instruct the person collecting the samples how to properly collect the ~~samples~~ samples at the first location, such as a potato storage facility. The sample logbook 14 may be used to record pertinent potato sample information, such as the location of the storage facility, the date the potato sample is collected, the type of potato sampled, the number of potatoes sampled, the location of where the sample is taken within the storage facility, the environmental conditions present in the storage facility, and any other pertinent information. The sample logbook 14 may also be transported to the second location. Alternatively, information contained in the logbook 14 can be communicated through other means, such as, for example, telephone, facsimile, or e-mail. To prevent any contaminants from distorting the sampling procedure, a user of the kit 10 should put on the gloves 12 before handling and sampling the potatoes.

Please replace paragraph number **[0023]** with the following rewritten paragraph:

[0023] The sampling procedure may be performed by collecting a tissue sample from one or more potatoes. In the exemplary embodiment, the potato samples are taken from a potato pile at the potato storage facility. Prior to collecting the tissue samples from the potatoes, the potatoes are lightly washed with water and rubbed to remove any dirt from the surface of the

potato. During the light wash, care should be taken to ensure that any of the skin or russet netting of the potato is not removed from the surface of the potato. If the tissue samples are taken from a single potato, two peel samples (constituting the tissue samples) may be removed from each apical end (the end of the potato that has the highest concentration of buds) on opposing sides of the potato to produce a total of four tissue samples. If the tissue samples are taken from two separate potatoes, one peel sample may be removed from the basil end of the potato (the stem end of the potato where the ~~tuber~~ tuber is attached to the plant) and one peel sample may be removed from the apical end on the opposing side of each of the two potatoes to produce a total of four tissue samples. If the tissue samples are taken from four separate potatoes, one peel sample may be removed from the center portion of each of the four potatoes to produce the four tissue samples.

Please replace paragraph number **[0025]** with the following rewritten paragraph:

[0025] In a particular embodiment, the peel samples are removed from the potato by inserting a 2.1 cm diameter metal pipe 16 into the potato. For instance, if one potato is sampled, the metal pipe 16 is inserted into the potato four times in four different locations. The metal pipe 16 should be inserted into the potato to a depth of about 5 mm. The metal pipe 16 is removed from the potato and results in a circular cut, or a peel core sample, into the surface of the potato. In another exemplary embodiment, an outer surface of the metal pipe 16 may be marked with an indicia about 5 mm from an end of the metal pipe 16 that is to be inserted into the potato such that a user will know how far to insert the metal pipe 16 into the potato based on the indicia. If necessary, the knife 18 may be used to disconnect the circularly cut, peel core sample from ~~in the~~ the potato. The potato peel core sample, removed from the potato by this technique, should be about 1.3 mm to about 1.5 mm in length, resulting in a peel core sample about 2.1 cm in diameter and about 1.3 mm to about 1.5 mm in length. As previously discussed, the sampling means 16 and the size and shape of the extracted potato peel core are not limited to use of a metal pipe having a defined size and shape.

Please replace paragraph number **[0026]** with the following rewritten paragraph:

[0026] Each peel core removed from the potato is cut in half such that each peel core half may be easily deposited into the container 20 of the kit 10. The peel core can be cut in half after the peel core is disconnected, or removed, from the potato, but while the peel core in still in the position of the circular cut in the potato. Each half of the peel core is placed into the container 20 using the knife 18 to minimize any contamination. In another exemplary embodiment, the peel cores may be removed from the potatoes, collected in a receptacle, such as a disposable, plastic weigh boat, and cut in half in the receptacle before being placed in the container 20. No matter what method is used to collect the peel cores from the potatoes, care should be taken such that the core halves are not touched by the hands of the user or any other possible source of contamination. In another exemplary embodiment, four peel cores from the potatoes are removed such that each core has a length of about 5 mm and ~~are~~ is cut into four strips instead of halves, each strip being about 5 mm wide. The strips of the four peel cores, whether cut in half or in four strips, should be deposited into one container 20 including the extraction solution 24. By placing all four cores from the potatoes in the same container 20, accurate quantitative measurement can be made at the second location ~~will be more accurate~~.

Please replace paragraph number **[0029]** with the following rewritten paragraph:

[0029] Another aspect of the invention relates to a system, including the kit 10, used to perform the methods of the present invention. The system includes a source of a sample, such as a pile of potatoes where the potato tissue samples are collected, the kit 10, and a laboratory or testing facility. Once the samples are collected and arrive at the laboratory, the containers 20 including the potato tissue samples are removed from the kit 10 ~~and~~ and are shaken for a sufficient period of time (*e.g.*, 10 seconds). The containers 20 are placed into a water bath that is set at a predetermined temperature, such as from about 45°C to about 55°C. The containers 20 are allowed to set in the water bath for a sufficient time to allow the same to be warmed (*e.g.*, about 15 minutes). In the exemplary embodiment, the water bath used to heat the containers 20 is heated with a hot plate, such as those available from Toastmaster Eclipse, to the

temperature of about 45°C to about 55°C. After heating, the containers 20 are again shaken for about 5 seconds.

Please replace paragraph number **[0033]** with the following rewritten paragraph:

[0033] In another exemplary embodiment, the comparison of the quantitated amount of the internal standard (Q) to the known amount of the internal standard (K) may be used as a qualitative check to help ensure the accuracy of the test. For instance, instead of calculating the ratio (R), the comparison may be used to discard measurement results of samples where the quantitated amount of the internal standard (Q) does not substantially equate to the known amount of internal standard (K) placed in the containers. In this exemplary embodiment, any data obtained from samples where K and Q are not substantially the same is discarded and the sample may be ~~re-~~recollected.

Please replace paragraph number **[0037]** with the following rewritten paragraph:

[0037] As is demonstrated by the data of Table I, the amount of sprout inhibitor quantitated from Group I and Group II ~~are~~ is substantially the same, where there is an average increase of about 7% from Group I to Group II. The slight increase in sprout inhibitor concentration may be due to the longer extraction time (*i.e.*, one week in the containers) that the tissue samples of Group II were present in the extraction solution. An alternative formula that can be used to calculate the amount of sprout suppressant (*e.g.*, DMN) includes:

[Peak Area of 1,4DMN] / [Peak Area of 2EN] x [response factor] x [amount of 2EN added to bottle (ug)] x 10 / 250

The response factor is obtained from the calibration curve plotting the ration of PA 1,4DMN/PA 2EN (on y -axes) against amount of 1,4DMN/amount of 2EN in the calibration solutions.

Please replace paragraph number **[0040]** with the following rewritten paragraph:

[0040] The results in Table II are substantially the same as the results of Table I indicating that the containers ~~24~~ 20 of the kit 10 and the methods of the present invention allow

for the successful collection of tissue samples from tubers at a first location, such as a potato storage facility, and subsequent quantitative measurement of an amount of the sprout inhibitor on the tissue culture samples of the tubers at a second location, such as a laboratory.